

determining some others of the following Observations.

O B S. VI.

The Diameter of the sixth Ring at the most lucid part of its Orbit was $\frac{58}{100}$ parts of an Inch, and the Diameter of the Sphere on which the double convex Object-Glass was ground was about 102 Feet, and hence I gathered the thickness of the Air or Aereal Interval of the Glasses at that Ring. But some time after, suspecting that in making this Observation I had not determined the Diameter of the Sphere with sufficient accurateness, and being uncertain whether the Plano-convex Glass was truly plain, and not something concave or convex on that side which I accounted plain; and whether I had not pressed the Glasses together, as I often did, to make them touch (for by pressing such Glasses together their parts easily yield inwards, and the Rings thereby become sensibly broader than they would be, did the Glasses keep their Figures) I repeated the Experiment, and found the Diameter of the sixth lucid Ring about $\frac{55}{100}$ parts of an Inch. I repeated the Experiment also with such an Object-Glass of another Telescope as I had at hand. This was a double convex ground on both sides to one and the same Sphere, and its Focus was distant from it 83 $\frac{1}{2}$ Inches. And thence, if the Sines of incidence and refraction of the bright yellow Light be assumed in proportion as 11 to 17, the Diameter of the Sphere to which the Glass was figured will by computation be found 182 Inches. This Glass I laid upon a flat one, so that the black

black Spot appeared without any of the Glass. And the fifth dark Circle was the fifth part of an Inch with the points of the face on the upper or nine Inches diametrically over it, and thence it is of the Ring being measured Diameter of 80 to 79 or to $\frac{16}{79}$ parts of an Inch to $\frac{8}{79}$ parts. Now the thickness of the (the $\frac{8}{79}$ parts of an Inch) is to the thickness of the therefore $\frac{12}{567931}$ part thereof; and the thickness of the

The same Experiment with the double convex Object-Glass of the same Sphere 184 Inches, and the plain Glass, the Rings, when the plain without the sure of the Circle of an Inch, and was $\frac{1222}{6000}$. For t